Notebook, PN-07-00-00.3

This undated pocket notebook was probably used by Edison during late 1907 and may have been used in early 1908. It contains notes and lists regarding experimental work and other tasks to be performed at the laboratory. Many of the experiments pertain to the composition and performance of alkaline storage batteries and to related chemical researches. The entries describe groups of test cells, indicate experiments with bismuth compounds, and list insoluble alkalis. Other experiments relate to dynamos, phonographs, the hardness of phonograph record blanks, molds and tints for cement, electromotographs, and an amplifying device. Among the employees mentioned in relation to individual experiments are Robert A. Bachman, Walter E. Holland, George H. Hooper, Jr., Ludwig F. Ott, and O. A. Rogers. There are also notations about patent, business, and clerical matters. Included are reminders to talk with Frank L. Dyer about a patent on a speaking kinetoscope and about possible legal action against a phonograph dealer; to suggest marketing ideas to William E. Gilmore; to instruct John F. Randolph about signing checks; to contact Walter S. Mallory and William H. Mason at the Edison Portland Cement Co.; and to dispatch William G. Bee to do research on electric vehicles licensed in different states. Also included are notes about printed sources that illustrate architectural details, for potential use with a molded concrete house; and listings of the numbers of motion picture films sold during autumn 1907. Three loose sheets containing entries by Edison on phonograph patents have been inserted into the book. The pages are unnumbered. Approximately 90 pages have been used.

PN-(07-00-00.3)

Enter this book

20

Thos A Edison

Edison Laboratory

Orange NJ

If lost please

return by mail

$$\begin{array}{r} 1840 \\ 120 \\ \hline 0 \end{array}$$

$$\begin{array}{r} 3 \overline{)13260} \\ 43 \\ \hline 16 \overline{)1133} \\ 16 \\ \hline 73 \end{array}$$

$$\begin{array}{r} 108 \overline{)3680} \\ 1840 \\ \hline 1840 \\ 1840 \\ \hline 0 \end{array}$$

$$\begin{array}{r} 108 \overline{)1840} \\ 108 \\ \hline 760 \\ 648 \\ \hline 112 \end{array}$$

$$\begin{array}{r} 220 \\ 55 \\ \hline 0 \end{array}$$

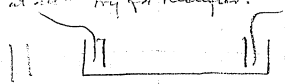
Non Com Dynamo

For 60000 Volt Direct Current Dynamo Commutator the fixed insulation of the commutator

Can you make Mica cylinder of required & Paraffined Cloth

HOPKINSON & SONS
SIDCUP
KENT

Ostwald says Mercury in H_2O does not conduct the current so it is not decomposed at all — Try for Reduction.



Pass powerful current thru & then make various color precipitations in the middle to see if polarization of the intermediate liquid affects the reaction

$BiCl_3$ from Double Salt with Chloride Na K NH4 & probably $BiCl_3$ —

Try full strength — soak — throw in large quantity H_2O — wash dry or do this 3 times — then dry & boil KOH —

$BiCl_3$ Sol in Alcohol containing a little Ether —

Try full strength $BiCl_3$ NH4Cl 10 min soak — then throw in large quantity water dry & use in tube without KOH treatment

Bismuth Mercaptide — $Bi_2S_3(C_2H_5)_3$ obtained by mixing a Bi Salt with Mercaptan in Sol in Alcohol & also Ether

Test metted ice for organic, Al_2O_3 Si & NH4 — manways water is always remarkably free of NH4 —

Bi Iodide $3\frac{1}{2}$ Sol 100 alcohol

Thiocyanate Bi — not decomp by hot water — glycerine in alkali or boiling reduces Bi_2O_3 to metal —
glycerine $1 H_2O$ — glycerine must be 4 times the wt of Bi —

Bi_2O_3 from Nitrate precip by KOH in presence of glycerol — dissolves in Excess — by adding glycerol & boiling the Bi is precipitated metal
Fat Nid dissolves with the alkalies glycerol possibly could make $N(OH)_3$ free of Metallic Bi this way —

Bi K Iodide — BiI_3 $KI + 2H_2O$
Sol in Ethyl acetate —

Bi Nitrate or other acid salt is mixed with considerable excess of Na pyrophosphate, more than necessary to form the sol double salt then NH_4 Carbonate till sol alkaline —

See if Bi Oxyiodide is sol in anything

Fatty acid sol $BiCl_3$ to which a rather strong sol of Na thiosulphate is added — liquid becomes yellow but remains clear — water can be added to any amount without precipitating Bi
The amount of this should be 3 times the Bi — The double salt is sol in alcohol — on sol decomp on standing the more rapidly the more conc it is — heat also assists.
The double salt splits up into Bi sulphide & Sul acid —

KCl produces a precip with it sol in water nearly insoluble in alcohol

Tartrate Bi sol in KOH — quantity Bi is also

Bi Citrate sol alkalies

$BiCl_3$ forms with NH_4Cl the double salt which I am using it also forms double salts with KCl — NaCl + probably LiCl —
see if sol in non acid —

Oxalate of Bi + Ammonia
dis in Hot water, clear
Sol – becomes turbid in few seconds

$BiCl_3$ 17.1 grms dissolves
in 100 grms Absolute
Acetone at 18

Nitrate Bi $Bi(NO_3)_3 \cdot 5H_2O$
dis 48 grms in 100 grms
~~Acetone~~ Acetone at 0 &
41 grms at 19 Cent

Alkaline Carbonates throw down
Carb Bi the precip is
perfectly Sol in Excess
of Carb Ammonia —
but according to Berzelius
is not Sol in Liquor Phosphoric
or Arsenic acid in Excess

~~Hoop~~ Hallcand Lect
Litt Tube in ice discharge only

Have one Bi good tube given
Hallcand to discharge in ice —

Reduce BiOH by different reducing
agents – work + then dissolve
+ have Hallcand test Conductivity

See if Hallcand got the
Sulphur out of the tube
with grease Mg Sulphide
Mg chloride

Sodium dis in anhy Ethy
Seeley Chem News XXIII 169
powerful Reducing agt + Na dissolves
to Blue Liquid +

Hydroxylamin base
powerful reducer

~~Hydro~~ Hydrosulphurous acid
made by current acting on
Na Bisulphite in solution
Use porous Cup " " notes

Na Thiosulphate in Oxl reducer
Cupric salts to Cuprous reducer
it forming double salt which
is a good reducing agent

Arsenious acid in alkali
good reducing agent

Vanadium Reduced by
Zinc blue Lepidol
Reducing agt

Allow upCP Nickel tubes
Rogers as perforating

Stable Solid Zinc Hydrosulphite
passing Sul Dioxide into a
mixture of Zinc dust &
an alcohol at a temp.
about 40 Cent.

See if Ethonic fm small coil works Emq with
Aluminum wire as a point
some time

Try dif Mixtures of Graphite in Emq.

Lowe Oil - 2 plat strips plate out ace
that will come but if 21% KOH in the dish
wash plat with acid + leave solution for
test

Obs No 4 Ni flake tube don't forget it
in regeneration

Boil some green in 21% Contain
2 grms Aluminum dissolved
used if green is burnt

If 707 contains traces of Al_2O_3 by boiling solution with Manganous Oxide in open vessel & carries down Al_2O_3 possibly must precipitate $MnSO_4$ & do it = removed by 69 Bn Off Walls —

Heat some green with Iodide K & some with Iodide K then make tubes test —

Try grinding 4 sqr flake Ox 708 of with Iqmy well washed HgO in Torch dec — to verify effects & also one with $LiOH$.

Al Reeffer try Bi Carb Nitr in which Al_2O_3 is insol —

Soaky mass in hot Conc Sol Na Sulphate neutral — take out & dry then wash off with water & little dry & use

Try finely div Ni with f Coke & 4 hours $LiOH$ in 25% KOH see if get reduce then well washed off $LiOH$ & then the Ni

Copper dissolves away in 10 NHCl at 80 Cent, not NHyCl —

Try 2 Emgs in series & multiply see if w Falcons —

Try Ferrocyan Cu & also Oxych Bromide for Ring Cylinders —

Try melting point Pure fuse & then electrolyze under powerful electric charge —

Pass powerful Current thru rod metallic Uranium see if more radiation —

Subject Uranium metal to X rays for some time & then look its radioactivity —

Put Calcium Carbide in Carbon Tube & pass see if Dennison's in tube —

With Square f Coke try 708 Hot plate & also in dev Incandescent Lamps to settle the question —

Record on phono using a Carbon stud brilliant throw - diameter on Eng with double dia very sensitive

Make a Rectifier for Centos & large Current by using a big dangler & Eng Chalk Iron by water

RQ precipitate green with flouted phenol or oil 3 oz for test of

Try coaxing H S thru zinc & then allow to settle see if anything known found or its decomposed

Form $NiCl_2$ & cake in an Emely crucible salt solution water or benzol - if in water could dissolve out by bubbling passing hydrogen thru the weight wanted reduce to metal

RQ Make batch 707 1/2 w filt - dried has to at, exactly up -

Try getting Colloids out KOH by shaking with petroleum benzol in presence any - Colloids adsorbed in the petrol & float on top -

Copper reduced to a mirror only by Cons by Aromatic hydrazines

Telephone gauge full of thin KOH, Cond in bed like passing an X'ray plate

Hydrochloride of phenyl hydrazine sublimes in the flakes thus reduce metals -

Mixing KOH saturated with lead oxide at cooling gives a cake chemist should be produced to oxide of $PbCl_4$ - the latter boiled out

Anhy $NiCl_2$ absorbs NH_3 forming Am Ni Cl - will thus be decomp in Ether decation etc dissolves out NH_4Cl of H_2O_2 be put in -

Ethylate Sodium powerful reagent - action Na Metal on absolute Ethyl -

Ethylamine precips Ni from its salts but dont dissolve them in Excess, + includes NH_3 dissolves Ch_2O_3 in presence -

Formate Na is good powerful reducer throws down Palladium from some solutions - by Na Sulph

Ni Carbonyl - deposit metal on dry Salt + decomp air Chr Ch.

H_2O_2 added to strong Barytа water precips perox Ba on Scales - add these to Sulphate Ni + thus deposit $Ni(OH)_2$

Chl ammon added to Mono Carb of ox, Na or Sesqui Carb NH_3 makes a solution in which Ferrous hydrox dissolves completely -

Copper dissolved by boiling Ferric Chl onto Copper wire see of works of Lake -

Boil some of the new NO_2 Gas with KOH. wash well + Run Reg

Try Sulphite Cop saturated with NaCl to dissolve Cu from flake -

Reduce Ferric to Ferrous + heat with 130 gms Water 200 gms NaOH. Ferrous will dissolve but not a trace of Nickel 5

$MnCl_2$ absorbs NHy then if heated is reduced to metal!

Hypophosphite K + Na Sol in alkali try " of LiOH

Group mons bowr. side out.

Test our distilled water for NHy

BaOH to form $BaCO_3$ to take CO_2 from Ni in old tube then dissolve the $BaCO_3$ by Chl NH or Succinate Ammonia. — When $BaCO_3$ is boiled with NH Chl the completely decomp to NHy Carb & BaCl — blue dissolves easily in same NHy Salts + in NHy Carb! Try bad tubes —

1 pt K_2CO_3 10 H_2O pass CO_2 to boiling lime, with more lime sol reverse reaction take steam KOH tube CO_2 from the lime — then explain Thinkup —

Soak grain in Cano Sol neutral $MnCl_2$ — dry boil KOH —

Revolving Microdesk Epoff

[illegible] under side to E. telephone various fields + electrification — discharge at X Holz machine amplifying devices.

Regeneration — discharge all tubes to Zero —

Soak out KOH in slightly alkaline Sol KOH. then in test tubes soak in sol of KCl 100 mlg 24 hours, then wash out 24 hours hot in large amount very dilute KOH, just enough keep from Rusting —

Attle Hypophosphite Na — boil several hours then pass oxate out in weak KOH. in weak KOH

Attle LiCy —

" 200 Mlg NHyCl as neutral as possible — boil —

100 Mlg BaOH, sealed — then soak in Chloride NHy neutral as possible — Boil tube in weak ammonia 1/3rd strength

" strong

50 Mlg K_2CO_3 100 Mlg LiOH, test tube

see if any oil or grease on
our bag tubes — then clean with
Carbon Tet & KOH. then water —
Carbon Tet on Bag if no tubes to
avoid use of bad gasing
Drop the long tubes
with 5 flakes in 21
various 21 OH — No 2 f
1/2 thick —
ditto 4 No 2
" 3 No 2
2 No 2

Reserve hunting up the
Refrigerated CP Ni for
test Tubes all Ni —

Soaking green in Titanium Sol
no 2 OH. showed gas after
24 hr — only one sample
Bi Hid dichr gas from
1059 to 1062 — Work
variations —

Run a group Tubes while chg. soaking
with Rubber 066 — try glass for
insulation temporarily the glass
Carbonly form on rubber hot —
6226 cobaltously gas 630 — cleaned
Reuben gave run 4th run 1060 —

Rep 1/2 wash filtered/dried low
heat Mass acting same as
6079 — with square No 2 ox
flake — see what it does
under good conditions —

green soaked in Ni SO4 1/2 bottle
to receive 10 gms Ni SO4 — dry
dont use KOH. but soak tubes
in KOH 24 hours after making

Group # 599 f No 2 ox
708 — 21% dont chg KOH
ditto 2 21 OH dont change
2 Fr% 3 21 OH dont change
2 long time long
tubes — ditto 21% 2 NaOH

group also Reg/green
soaked in water & boiled 30
& fizzle dry —

Long tubes groups
50 mily 100 200 500 750
in 21 & in 25 to
Neutral ship 1 oz 2 gr
of Lake 4 = 1/2 ounce

See about 10 lb of wax over
Bergman and he will
run — send bill required Mr
also Cabling Anis Chrin
Sen Stevens —

Oxidize some tubes
Reg plated Nickel reduce —
H — also run on 1.0 H —
also oxidize CP Nickel
& Red run in 21 & 21 1/2 hr H
also Ebrd brass plated
also Reg lightly ox gun metal

See if can coat tubes with platinum
& bring up in Hydrogen — also silver
Try group tubes Aqua also Bismuth —

Make variations with HCl_2 &
$NiSO_4$ soaked in green & coffee are to
be smelling to test

Heating flat plate 707 & 708
Cool and 1/2 lb good — vary it
4 to 2 1/2 —

Boiling green in HCl_2 good
vary test & flake too No KOH,
ditto in very Titanium —
Try group tube not plated in 21
& Group — 21 2 gms 1.0 H —

Insol alkalis

Cupric Antimoniate $Cu(SbO_3)_2$

Mercuric "

Lead arsenite $Pb(AsO_2)_2 \cdot xH_2O$

Ag " $Ag_3 AsO_3$

Boron nitride

Lead Chromite $PbCr_2O_4$

Mg "

Zn "

Ca "

Iridium Trichl $IrCl_3$ anhy

Lanthanum Hydroxide

Molybdenum Sesquihydroxide $Mo_2O_6H_6$

" " Mo_2O_3 also Mo_5O_{12} [illegible] MoO_2

Molybdite Mg $Mg_2MO_3O_8 = 2\ MgO\ 3\ MoO_2$

Potassium Sodium Columbate

Columbium Diox Cb_2O_2

Platinous Cyanide

AgCn

Didymium Hydrox

Erbium "

K Ferrite

Ammonium Ferroheptanitrosulphide

Calcium Ferrite

Mercuric Iodate

Mercuriammonium Nitrate $2\ NH_3\ 2\ HgO$

$N_2O_5 = NH_2\ Hg\ NO_3 + \frac{1}{2} H_2O$

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aluminates Ca Zn not attacked by KOH [illegible]
[illegible] not attacked KOH boiling
[illegible] Mercuric Sulphide
[illegible] 2 [illegible] Na sulphide &
2 [illegible] 1.33 [illegible] HgS [illegible]
[illegible]

Ba Ca Mn Ferrites not sol boiling KOH.

P 832

Wöhler 1st [illegible] MoO_2 fuse Na Molybd
in porcelain crucible [illegible] Zn added by
small portions [illegible] heat till crucible
[illegible]
[illegible] with KOH +
KCl [illegible] H_2O dark blue
[illegible] strong metallic lustre
conduct electricity not attacked by
boiling KOH or HCl

[illegible]
[illegible] KOH [illegible]
Cathode [illegible]
[illegible]
[illegible]

[illegible] $HgCy$
Ni Ferrocy [illegible] $HgCl$
[illegible] Oxalate K [illegible]
[illegible]

NH_4Cy $LiCy$ — NH_4 [illegible]

[illegible]

2 pts Na sulphide [illegible] NaOH [illegible] 1.33
[illegible] for Hg Sulphide

Compounds not sol or decomp by KOH

Di Mercuriammonium Carbonate not decp by KOH
" $CHl + H_2O$ "
" Mercuric Chl " " mod

Cuprous Sulphoxanoate not affected KOH
Mercuric Sulphide mod. boiling KOH

Regeneration
Chl Ally Sulphonal
[illegible]
[illegible]

Try soak gross Ammon fluor. [illegible] alkaline
also for Regeneration.

also Ammon Fluoaluminate. the
Bact decomp & sets free fluorhydric
acid which will then combine &
form Sol Salts with X
Ammonium Salts & Fluorides are good
Always try dissolving acetate X

group all CP Ni-oxidized Peacock
705 702 ½ f ox
dotts mw 707 2 hour filter bag

Regeneration Mercuric Sulphide
Sol K_2O in presence Alkali
also KSH, ~~[illegible]~~
Conc Na_2S even in presence KOH.
Nathiro

Hooper run slowly cuts on
the good ad 707 no Lioll

Dr [illegible] as by the 1340 wash
Bi-gram for Bi 6%Bi

5 groups,
3 ~~[illegible]~~ 10 gram stamped
1 min dried boiled 10%Koll
ditto 3 min
ditto 5 min
ditto 5 min boiled 21%
ditto 3 min boiled 5%Koll
No wash —
Conc $BiCl_3$ $NaHCl$ —
tube dropped into making
also 708 — Dup of 1348 [illegible]
if enough left —
also make more 708
to dup it —
also 3 min [illegible] 719 —

from 2 Lioll groups
soak out the Lioll thoroly &
thereafter run in 21%Koll

find out from broker from whom
I got the Bi_2O_3 from abt
Bismuth and Yolung for
his letters he quoted Bi

Scheme Sickels Iwo Blocks on Knight's
Strip — Take Bargaining also
photo + send Rep by Strip
on it in it comes out a bit
transfer — Glaister

try 3 grms for 2 fl½
in 100 cc H_2O add of tube
iron out of flake

getting of the Chi tube
grid to have Hooper
see how it comes down
before

~~Mi Electrode~~

~~KOH~~ ~~Sol of KOH Electrolyte~~

~~Mi Electrode~~ ~~without boiling~~ ~~Electrode.~~

~~have end Electrode come within 1/32 of KOH~~

~~Dally precip Jumpelitz Soln by dilute acid forms Dihydroxyl Anthrin Soluble~~

~~Hydrolyzed by reducing organics made~~

Anthraquinone without ~~only~~ all oxid. agts, alcoholic KOH or ~~chrome~~ ~~Fuse~~ KOH. to Oxid. Anthracene.

Not sol in KOH, marky sell hydrosolum ox by chrome except Anthracen also in KOH but Anthraquinone dont – there in way to operate it by the insolubility – KOH – ~~anthracene~~ ~~and Not Benzol~~ ~~also alcohol~~ ~~sol~~

Anthraquinone sol Aniline ~~gives~~ " alcohol –

Try Carbazol sol Alcohol acetic Ether –

probably green on ated aniline when oxid by Hypochlorite K forms Ind bu. ECO aniline. we made file of ~~a~~ ~~not~~ ~~sol~~ in KOH – made some – Hypochlorite forming in aniline & heating –

Try Nitrate Uranium green a precip by KOH.

Anthraquinone Very slightly sol Alcohol slightly sol Benzol gives Aniline best solvent Hy dont hurt green

Carbazol not affected by Alcoholic KOH even at 300°C

Sol – of pts – 100 alcohol at 14° + 3.18 pts at 78 also Sol Toluene .5 pts at 16° 5.46 pts at 100 Cent

Not reduced by Sodium Amalgam

Carbazol is however oxidizable by Chrome in acetic & &c

Therefore inferior To Anthraquinone

Solar Cement
Mix Chl Lime with Cu Nitrate
from Lime-salt of Copper and
brandy & water over

Try 2 grains in 1000 cc 21% K.
When plot in glass Sodium sol of
fol days if only part in green
Try Sr Bi in green

Carb Ba Sr Ca.
otherwise of Ba Sr
plus Bi Bitho Bibenzyl salt. sealed crystal
Sol 20000 H2O not accompl Kotts.
plus Bi Bitho Stilbene salt not accompl Cy Kotts,
which accompl from.
Tinctures Ba Sr Ca Jap boil
Urohmate K
Antimonate Ba Sr Ca Jap boil
fol try also

See problem for just slight action
Water make 1 ounce — then dip Ba Cl
dry — then Na NO3. dry — precipitate out.

another orange dot paper — penetrating out —
the Chl between the [illegible] as [illegible] gets in

Barium Urohmate & Jap & oil Kott
Strontium " "
fol make groups.

Billy-Bee — get from state bureau
definition — all [illegible] licensed who owns

Tell Randolph that
hereafter I will serve
Cheaters for the boys of
Washington —

ask John what our
letters are at Edison

Mallory — new man can
sell wheel delivery
ask Holland if he looked
the group to Bi pure
1400 mil amp

719 2 hour

Make Conc HCl from 705
+ Soak dry + Cool KOH, phenolate
dry + 12 stack, dry + cool KOH
percolate & dry

another group 3 times, 719 2 hour

Aluminum 125 Cones with
small bracket for Dusker
probably reconfig Cones, Cast iron
Cones 15 dia hollow or Cast iron
screw with gallows iron @ 7 11 11 @ 11 expensive

Condenser 1 Elev for all the 5 Pipes
for all the small or 2 Elev

Bend down stacks on the 2 dryers

Be sure heat some
flake with HCl to
dissolve out any impurities
+ Cry

ask Fred all of he sent
best runs to Somerset

test viscosity of Clays dif
Kinds for decomposition in
Cement Silica Shale
Lime Fullers Earth
Kieselguhr - Carb Mag
Rosin Soap - Trylig Phosphate
Alumina
Soda + K Sops gelatinize -

Export Silicate Soda on
Cement Impurities -
Pb Carb from Sulph +
phos lead precip Water
Glass digest Concrete
Impurities

put Chloride of Ca in Cement
+ Neutralized Sleavale K
Wash + heat iron Impurities
Sleavale Ca neg to the
Water Brings it Other
Sleavale in ok

group 5 grms Bismuth Hydrate
Each cell — 2 grms LiOH.

$0.51 the one that gives
1467 — 27%
2 grms LiOH
and rubbers 2 grms

807 —

Purify H — Ra —
1st H_2O 2nd NaOH.
3rd = Chromic ac
4 then NaOH.

Crystalize once KSO4 —
Crystalize by BaOH —
Test often voltage — effic chg
use fresh iron + Ni —

ditto 6 Crystalizations —

also drop with Baryta prox
Recrystalize —

Holland to try open volt
with Cu — H_2O electr. plat — see
if falls Brown —

Daly Reg no H from Zinc +
abstrs is bromine + H_2O —
use 1st H_2O 2nd NaOH, 3rd
Chromic acid 4th NaOH or KOH,
then ~~phosphoric~~ Glacial phos Stick

group — flake treated HCl 5 gr 1/2 ox
5 grms to 5 drops Conc HCl —
warm — brought H_2O 5 grs 1/2 "above flake
ditto 5 grms 5 drops Nitric
ditto, 10 drops Conc Bromin Water
Make 10 grm tabs —

~~group of Ni gauze tube come out~~
~~719 Ra 2 tubes —~~

~~ditto CP Ni 2 to 719 flake added~~
~~only acid 1/2 ~~

~~U 3 feet long powdered glass~~
~~pieces glass moistened Nitrate~~
~~Lead absorb H S~~
~~2nd tube with glass moistened~~
~~Sulphide Sub H —~~
~~absorbs arsenic hydrogen~~
~~Sulphate Cop absorb H S.~~
~~Arsenic Sub H of glass~~
~~Hydrogen acid gases~~
~~absorbed by U filled with~~
~~Lump KOH — first U for~~
~~broken glass & glass tubes~~
~~Sticks broken up —~~
~~No phosphorus — also H 2 O 4~~
~~Chromic ac —~~

~~Sec that H_2SO_4 is free~~
~~of Oxides of Nitrogen.~~
~~Bertha Zinc — Elify Co~~

~~10 gms flake Na drops~~
~~HNO_3~~
~~ditto 10 gms 32 drops of HNO_3~~
~~new Hydrogen flake~~

~~test $Fe_2 + Al_2O_3$ new flake Mg~~

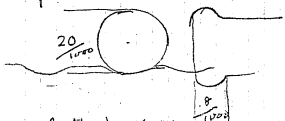
~~Treat 60 grams new flake~~
~~8 drops HNO_3 10 with acid~~
~~16 10 with 24 & 10 with~~
~~32 drops to neutral —~~

~~Oxreduced put 100 grams~~
~~back in Copper absorber~~
~~solution — Wash gauze~~
~~50 grams — treat 10 g~~
~~with 8 drops nitric~~
~~10 with 16 10 with~~
~~24 & 10 with 32~~
~~drops nitric~~

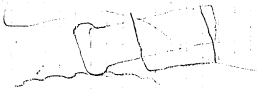
heat 10 grams of flake
oxidized Gut in retorted
with 8 drops nitric
detto & evaporated —
The put in crucible on
large tray bath & reduce
Nely H +

Write Mason
Analyse sheet in
No 1 or 2 Dryer
perhaps tin much
Clay to be useful

Layout on board

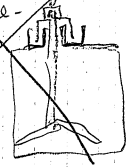


see what trading button
has the shoes to Weber & Miller



suggest to Miller burnt rubber

Possible for Mfg Co Assembling
Special -



Keep Mfg in

Got last fast auction days
when my batches on
dish the wrong bowl
Colored with Lye?

Rec Bookkeeping about
that Commit a course on
Stick Chapstick —

find out how developing
Nitrogen Explosion on
$2504 —

Dow Chem Club to make
lead Compound which
proved in regress the
one in bank.

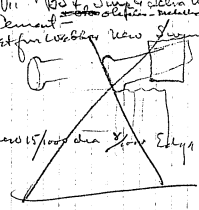
Barnes Waffle 3 ft sgt
mould with ornaments
on Cast 3" thick

Hertler – Ulong/drawplatform

Jwa – work at L&L Meyer
send down plug &
20 thread Mounted & Reproduction

Bell Bee –
Get space down for our
Board Rack for Goodrich
people

Dyer patent Kewels xylophone.
BS + Jung & other Wally works
Cement –
Get from Lockhart new Jung Reproduction



New 15/000 dia 3/4" Ellyn

Dry prepd Carbonate
with Sulphate Cu & Chem
Comb Sodd
ditto Chromium Sulphate &
Chem K Cl4

Proletariat

Bismuth

Cobalt works at Oberschlema
and Pfannenstiel in Saxony
which incl principally ores from
Schneeberg & Austr-Hungary

Johann Wilhelm Incl Austrian
& Bohemian concession ores from Port Chalo
Bolivia

Meymac France Pb ores
mod value

At St Andreasberg works in the
upper district of Harz Mts containing
Bi in a cl to facilitate
treatment

at Frankfort-on-Maine in the Works
of the German Gold & Silver
Refining Bi is prepd from
skimmings

Debo Smelting & Co work about
Bismuth —

Web Bilbao — ditto Bismuth of
Bi Co — Ammonium Sulphate Cl
Nichols Chem Co, 64 Bi

Fred Ott mixed Couple
cylinder for Eng of
Fuller's Earth —

Recov of Bi Cold
ditto Bi Lead Cold

Dry insulated partition in
Rubber Cell 21 K Volts
10 years & was was good
Dynamo Telephone

[illegible] Ellis [illegible] office of London
20 wide —
make 2. pence multiple —
also if in [illegible] make
Chalk very narrow to
distribute [illegible] 20 woman

[illegible]
about [illegible]
[illegible] well [illegible]
Mail [illegible] of a [illegible] [illegible] Chairman [illegible]
[illegible]

In old [illegible] I found [illegible] stated that
a Reg pocket [illegible] through with
plaque [illegible] under 750 to V
[illegible] 20 where on the same
pocket [illegible] [illegible]
Clay [illegible] 400 to V
when [illegible] close to the [illegible]
[illegible] change agent
[illegible] when [illegible]
[illegible]

The Appian way in the time
of Augustus — Mrs Ct Stewart
Caligula — ditto Poppice Vespa
(thumb down) Roman Chariot Race
all in Stewart Cheltenham

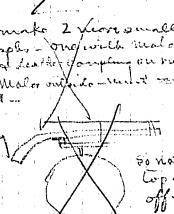
[illegible] Chairman Mahals Houses
[illegible] Chairman ditto
[illegible] Pipe [illegible] & my. Marital
[illegible] — House in [illegible]

the Clay
See Reps [illegible] has many on rep Albany
[illegible] [illegible] [illegible]

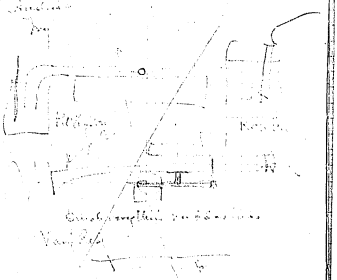
[illegible] [illegible] [illegible] for
Clay models [illegible]

John all make 2 [illegible] small
Mahogany — one with Mail of
a [illegible] [illegible] [illegible] on rubber
Enclosed — Mahog [illegible] — [illegible]
[illegible] Ct —

Wooden tray



Do not cut
top [illegible]
off —
in 202 thread



Schulz & Weiberg – Wallenstein
see the wood-finish & grade of room walls –

Return from the Front – Mantel
finish – XII Section of Lessons
Arch. Jr.

Mansions of Eng – Porch at
Audley – plate 29 –
Fireplace Woodly plate 21
Porch 344 Vol plate 61 –

Spencer's House St L American Architect
Oct 27 1907 = Cancellation on Columbia Tower –

Hemmer on Architecture Place
Burbank Mch 16 1907
American Architect Roof –

Make 20 Sr CO_3 + Try
10% KOH + 5% of other chemicals
mixed for boiling –

Tasmania at Mt Ramsey
Bismuth Tin & and be
danger in the wind

~~Tickets for Doyle + wife Jacksonville 2nd Class~~

Bismuth is contained in Copper Matte from Blue Lines
~~Copper~~ found out –

Film
24 Wellsen boxes 50 wells
Specs up to 30 42.5
Specs between 30 to 35 37.5
Specs above 35 to 40 40 over 32.5

There was Rhenocontining
Sulphide Sb & Bi in
Shoshone Co Idaho 3 miles
from junction on South
Fork of the Coeur d'Alene
River

There is a mine at Loveland
Colorado, ore was shipped
from there 10 Ton Bi —
in the Chicago output

Use 719 soak Bismuth
8% simple — 10 mins —
wash ethyl dry bad
Kop wash well then
soak Hgl rotten wash &
dry above in KOH, look
at tube & not, idea is the
Bismuth must have
Mercury

719 & 708 - filled with
Bar Sulphate. These all ammals filled
with Bismuth — Also Strontia

Also Carbonate Ba also Sr Carb
& Bi —

also ~~Strontia~~ Sr_2CO_3 Bi + Hg

Strontia Chl K SO4 - best.
use this with Bi also
Bi + Hg —

	Cold	25
Sr SO4 — pres	1211	1219
" " 60#	1130	1254

This is good base to start
with — for Bi + Hg add Iron
use 719 2 hour

Better try the several greens
with the Strontium —

also Vary 719 2 hour
by soaking different times
also try last soak of the
2 Reagents —

Transliqide (Why $Pb(OH)_2$ in Solution
but it [illegible] — Put it in book
it will use up probably separation

for Rechecking RCC dry green
Heat on hot plate and [illegible]
right away do some on coal
in Closed box — 21 & also 219 —
2 $Pb(OH)_2$.

Dip the $SrSO_4$ —
21 21 & $Pb(OH)_2$ & of strength
25% KOH & $Pb(OH)_2$
2 of above in Brock
group —

dissolve green known
$SrSO_4$ in SO_4 recheck
[illegible] $SrSO_4$ in it —

Chromate & $BaCl_2$ — 1211 1217
[illegible] 1142 1241

Try CrK & $SrCl_2$ —

Dry Coal 55 [illegible] grades
Mg [illegible] more [illegible]

Sr Nitrate in [illegible] coal
find a more [illegible] [illegible] will
[illegible] [illegible] [illegible] when
$MgSO_4$ [illegible] Try [illegible] heat
[illegible] Sulphate.

Try $Cd(OH)_2$ in [illegible]
[illegible] MgO.

[illegible] Co & Si [illegible]

Try Soak 719 — Crub [illegible] dry then
in $MgCl_2$ [illegible] 12 hours to form
$CaCl$ Mg in [illegible]

Soak 719 in $CaCl$ dry [illegible] crack
in [illegible] $CaCl$ — $MgCl_2$

Soak 719 [illegible] [illegible] dry [illegible]
Cone $BaCl_2$ [illegible] [illegible]

Soak 719 Cone $BaCl_2$ [illegible] dry
then soak in Boiling Acid Cone
$MgSO_4$ [illegible] hours to crack well

Soak 719 in [illegible] 12 hours — 2 crack
[illegible] — then dry — then soak
Cone $BaCl_2$ $MgCl_2$ $CaCl$ 12 hours — crack
well

Soak 7 19 Phosphate 12 hours 2 quarts warm
then dry = then soak 12 hours
Chlorine dissolve Chloride —

Bitts soak 12 hours Chlorine [illegible]
2 quarts warm — dry then soak
K or Na Carbonate also soluble to wash
must wash also — soak 12 hours —

Phosphorus cannot be dissolved
by boiling H2O — must calcine with
phosphate and decomp HCl

- Hornblende, Titanite — Mat Calcine with
good — impurities must be equal
Bitts phos similar — must decomp HCl
Aluminum Chl & NH4Cl formed
double salt — not decomp by H2O
or the air —

also SnCl dec in decanted water
1 300 pts Bitts to 1 44 quart H2O
more from more H2O or air
Aluminum from double salts
with several other [illegible]
which are crystalize —

Stannic Chl form — [illegible]
Salts with other chlorides
which crystalize — [illegible]
formed by increasing [illegible]
of 2 chlorides [illegible]

The common salt 2 NH4Cl SnCl4
dec in 3 pts H2O —
above may not work as Sn Cl2 dec
salts by NH4Cl nor hydrolyzed by H2O.

Tin is like Bi [illegible]
Easily goes into [illegible]

Carb Calcium is better than Ba for Sr
Strontium carb Cl2 has no advantage
that the precipitates crystalize
are free of [illegible] & [illegible] from
Ba — Ba Sr 2 H 3.00 when CaCO3.
10000

Soak 7 19 Carb K or Na according
must Sol 12 hours then wash 2
quarts dry Soak Conc CaCl
12 hours —

also Rev Soak CaCl 1st 12 hours
then wash [illegible] dry — Soak
Conc Carb K —

Barium [illegible] Crystallization
Impure [illegible] —

Heat formation Bi Compounds

$Bi_2O_3\ 3H_2O$ 137740

$Bi_2O_2\ H_2O$ 103050

Hydrous of Bi_2O_3 or $Bi(OH)_3$ [illegible] with water it forms Metahydrate $BiO(OH)$.

BiO is a compound radical "Bismuthyl"

KOH strong precipitant for Bi salts

$BiO(OH)$ which loses H_2O [illegible] easily when boiled with KOH. —

Group. Soak 10 mins $BiCl_3$ H_2O [illegible] acetate acid 1:1 [illegible] soak Cold [illegible] — wash cold — dry in Cold [illegible]

dilute [illegible] [illegible] all cold

~~Bi~~ Group [illegible] [illegible]

200 [illegible] $BiO(OH)$ —

dilute [illegible]

" 1000 [illegible] 1 gram [illegible]

" 500 [illegible] 2 gram [illegible]

" 200 [illegible]

also 2 gram $BiOH$ no $LiOH$ —

dilute 2 gram $BiO(OH)$ — 3 gram LiOH

" " 4 " "

Use $BiOCl$ gram [illegible] water on $BiCl_3 H_2O$ then dissolve [illegible] 2½ gram — KOH [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

~~See Wheel [illegible] strong [illegible] process [illegible]~~

~~See Weber about [illegible] salts in [illegible]~~

Nitric a 1.2 S.g. 32% [illegible]

40 drops 1.77 cc weight 2.1426 grams

Wet acid in 40 drops 0.7768 grams

~~[illegible] Bi [illegible] Lake acid~~

~~Wed — drop of acetone Bi [illegible]~~

~~Tone ½ ½ strength —~~

~~Made 2 [illegible], Wash —~~

~~Acetone soak KOH [illegible]~~

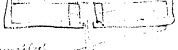
~~Wash —~~

[illegible] change sulphuric [illegible]
200 flow of new [illegible]
put CPS in a [illegible]
affording the wrap
also [illegible]
also Mix of [illegible] Glycerin
to Nitro [illegible]
also - Carb Sir
also in Chromic [illegible]
boils hot give Chromic [illegible]
in [illegible]

Heat [illegible] [illegible]
[illegible]

also [illegible] with [illegible]
[illegible]

Cutter [illegible] [illegible]



duck [illegible] [illegible]
[illegible]
[illegible] (Stopper -
[illegible] of [illegible]
[illegible] [illegible]
[illegible]

Dry in [illegible] [illegible] Bichr
[illegible] [illegible] [illegible] Gold
[illegible], test [illegible] [illegible] 2.
[illegible] [illegible] 5 grm [illegible]

[illegible] 175 cc
[illegible] 2 grm Bichr
with [illegible]
[illegible]
Heat [illegible] 2 grm

[illegible] cc [illegible]
in Heat Rot [illegible] Carbonate
[illegible] 2 grm [illegible]
[illegible]

Pour 2 [illegible] [illegible]
[illegible] [illegible]
Connect [illegible] [illegible]
[illegible]

[illegible] 1400 Bi
50 Run [illegible] for [illegible]

[illegible] of (washed) [illegible]
[illegible] and [illegible]
[illegible] water Cone 1/2 & 1/4
C P [illegible] =

Run 30 [illegible] KOH Cell [illegible]

[illegible]

[illegible]

[illegible]

[illegible] of [illegible]
water =

[illegible]

[illegible] Precip [illegible] NH4 - [illegible]
Wilkins [illegible] then wash out
KOH [illegible]

[illegible]
KOH [illegible]
[illegible]
[illegible]
[illegible]

Take Colored film, shutter
with Colorado [illegible], & use 3
pictures for each wavelength 1 -
run 60 per sec -

Precip. 1 oz Bismuth hydrox
wash well heat KOH -
wash free press in button
put in Ni frame & see if
its ox & reduced by
Current in KOH - 1e of
Conductor when ox & reduced by
Current -

Bypr acc of potassium Sparkling Pt'ments
prepared 2 bottles filtrate in
[illegible] — bottle 2 boxes 2 bottles
clinical sent — bottle 2 clean 2 leaves 2 sets
for all observations [illegible] — BS lumen patient
Cement may [illegible] or addition
specially ground Cement.

Dry dry 719 in $BiCl_3$ NH_4 Cone
in fur seconds only no water right in
KOH —
another dried [illegible]
bottle — $BiCl_3$ acetone — dry Nov KOH

Dry 7c SrCl dry then Na_2SO_4
" Baal " "
" $BiCl_3$ NH_4Cl Cone
" " " 1/2
" " 1/4
" Cadmium Sulph sol
$MgSO_4$ then KOH —
Uranium Mg then KOH.
Sulphate 1/2 then KOH,
$BiCl_3$ Acetone 1/2 strength
" " 1/4 "
" 1/8 "
Bi Nitr 7c in 21%
" 21% 7c KOH.

$BiCl_3$ 7c in Sulphuric Acid
Chloride
Chloride

175 cc 21. 20 gr to Ammonium chlor
in A boil 719 [illegible]
719 — boil water only
719 Boil 21% 3 grams KOH.

$BiCl_3$ dec in Ether — alcohol etc
Bi_2O_3 sol Ether made by adding powdered Bi
to equal parts of Bromine + Ether. —

Sodium pyrophosphate forms double salt with Bi
Very [illegible]
and to $Bi(NO_3)_3$ sol pour the Bi would be [illegible]
No pyrophosphate of will [illegible]

Fuming Metallic Bi + hard w'lube with [illegible]
just no of strong green sol results —

Redissolve the $BiCl_3$ acetone then add,
fresh $BiCl_3$ acc of it dissolves again

K Perchlorate insol — put a Metal perchlorate
in green then dry + boil KOH, then leave
K perchlorate in green

Dissolve in fine charge Hot 1 pt Bi Sul metal
+ 2 pts Na_2Thio_4 plus in fine c c H_2O.
The entire sol is poured into this fine of other Ethy
of gray is estimated with then + KOH
added a pinch of K salt is given no
other known thing does this

Fluorescein — K — used to detect K

group 21 K 2 NaOH 2 LiOH.

Reagentia: Phosphorsäure in
gröbsten u. dünnen Form
ditto in Cell only

Verdampfungsschale

Porzellanschale C.

Bodensatz in Cone beob
Zuerst K

ditto
Grün in Hypochloritlösung K, wasch
Grün KOH Phosphor Bodensatz Yellow
Biolyse in Cell only dry then
Pot.

Bodensatz K blanchen
K Metaphosphat
K Tungstate.

Bodensatz ~~[illegible]~~ 3 or 4 times for
Precipitate in water K, then dry low
heat, wash Cell yellow dry [illegible]
in general [illegible]
Potassium oxide –

[illegible] Lake Hydrate 1891 [illegible]
Brownish Coll Ppt [illegible] every
time [illegible] Coal on [illegible]
[illegible] was exposed [illegible] on 27/1
[illegible] KOH [illegible]

Brown [illegible] 27/1 2 [illegible]
[illegible] Precipitate [illegible]
[illegible] 21/2 [illegible]
[illegible] glycerol [illegible]
[illegible]
[illegible] do not decompose
K Nitrate

[illegible] Ge [illegible] Ppt [illegible]
[illegible] ~~[illegible]~~ [illegible]
[illegible] KOH.
[illegible]

[illegible] will use also [illegible] group [illegible]
but use weak filter, strong [illegible]
[illegible] coarse.

~~Put [illegible] about [illegible] fine coal~~
~~[illegible]~~

Take one of the medium Br groups
[illegible] giving 1320 about a
put in 27% 2 KOH & run
that —

Hermitage make 2 Reg KOH [illegible] 21%
2 12½% KOH [illegible]
2 21½% " 2 "

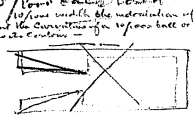
[illegible]

Put up group of RC grain
where we neutralized the KOH
with 27% KOH & LiOH —

Prepare NiSO4 with submerged
Dol CaSO4 - 20 Ni well
Combine with Ca to form the [illegible]

Mention 210 Fahr
Mould heated 230 @ 7.45
3½ mm coal diff 1½ H_2O 2 m air
must have quick chill
Wash water for castle or mine
Take 20 mm coal — run
Gray surface on account used get
quick chill —

ask Dyer of he polished
Use 5/1000 groove —
10/1000 each [illegible] —a record
with a 10/1000 width the indentation of a punch or
change that the curvature of a 10/000 ball or butter
will follow the curve —



Record moved paper
Use Eylewism co water go out

When Dr[illegible] gets CP accions make Cone
Bicly or ½ Cone soak 10 min — weigh CP acetate
~~punch [illegible] group so about 18 hours~~
then wash 3 or 4 times decrease —
Drop ½ Cone 7/9

Hooper ~~Try probable on how~~
~~& run hot Carbon acc. to~~
they go off when hot

Dyer about securing a
dealer selling Trade Arnold's
Records — Look up other patents
making Alc.

Why would MnO be useful for
Leland. Back a lube with
Precip MnO — charge fully
& discharge with Zinc —
KOH — Does Mn would form
Manganate possibly would
Reg Silicate K to help out

Permanganate of Manganese
would be also & Hydro Manganic
acid — Precip Protoxide of Mn by
permanganate K —

Try get rid of odor in BS
Try Fullers Earth —

Holland ~~find out~~ with Copper
Electrode if non causes low
Cap on charge of cell Hot —

get some new process Green
initial Manganese Thorn & Bank
Packs on BiO_3 decline with
Hg_2Cl_2 = also try Hg_2Cl_2 in
acid solution & BiO_3 decline
alone no Hg_2 —

Put some Reg $LiOH$ on Reverse
Hot test = Litho Bismuth &
$LiOH$,

Hooper take off the 1st
group that had Bismuth
only in Electrolyte &
run it over & off without
changing liquid —

Make Groups $BiOH_3$
& fill pocket into mass
with [illegible]

an intermediate ox of Cu but
CuO & CuO_2 is obtained by heating
CuO in KOH or K in the Chemistry
~~lab~~ Hallund – Lehrbuch was plate

Suggest to Gilmore that Reg
advanced ~~but~~ a complete of
Prelude Reports & a brief form
Eng Journ of Lithium formula
to order from –
perhaps Fronatis

Speak Hooper Blors in 60x
unused books. SB an form
proof at Phoms office –

Try group of in 1 gram Bi OH mixing
2 KOH & 2 grams K phos acid –
Lutz makes Bi Sulph

also group Bi OH hydrated group in acid
from Hydrate Bi with chloride K –
dry cold – use 2 grams in Coffee

Try group 3 grams
K ambimonate in Electrolyte
dell. 2 Sb + 2 B_1 2 Li_2

also 80 mlg Phosp
50 " gold
~~250 mlg~~
150 – Potassium
150 – Calcium
150 – Lithium
150 – Sodium
with without gold –
group 5 Rings 6 7 of rings
group 719 – 1½ No 3 acid –

also 5 6 7 8 mlg
1 1/3 Tin 33% 9 grams KOH to
bust – new ~~[illegible]~~ old
tubes sent with 1 gram Lyon –

Wacker special iron packed for
long tubes 20 cts ea long or tubes

Fred Gill Roll 719 with No 3 flakes
90 + 10 + Iron wire 129 – 8 + 15

Look Tubes NCP Bichy Acetone dry
low temp nonaqueous while warm
in boiling 21% K to produce
anhydrous mixing

Precip Bi Nitrate in Conc. LiOH.
see if soluble in H₂O
filter off & evap solution then
add water see if Bi ppt
also KOH & BiOH —

group 1 KCy 2 LiOH 2 K

XYZ. Bi Cu Li connected. Bi breaks
down into Cu & Bi. Cu to Li colour
phosphorescence comes from Bi. if can
find a element try 2 mg in
dry photo salts —

Try group 2 2 CuOH 2 BiOH.
2 LiOH — in Electric light —

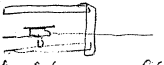
Group of 3 4 mg in the Electric light
put ½ gm each of Antimony Sb, As, Sn
Li Bi Cu Hg Cd —

Another group same but add ½ gm
Zn Pb, in addition

group with BiOH in power &
CP tube grind into powder

Dell's CP Ni Co with 3 grms
Bi O in Electric light —

Debbs & Walth



patch by use of ball on
weight pulling wire
Mr Chen —

Walter Miller to record a loud
xylophone at 200 & 240 — 4165 Rey
make measure all on one cylinder

Tell Walter Mr Grant

also chilling mould more
to harden tube that make
depression & the back regular

Tell Walter try ball expand
on 35° back —

Dry green [illegible] $NaSO_4$
Nitrate Ba $Ba(NO_3)_2$
washed + not washed —
Long + short soak —

Soak several times Conc ?
" " do in Nitric Alcy
dry & ignite then KOH
Work free + soak more times
till fore closed —

Walter Miller has the fine graphite with new way to prevent its burning —

Try new double Ball Cover on Xylophone for urns 100 times —

Lons All - Get list req records + new records
4 buy Mercury Fragments —
1 Dip Cellulose from Urs —
2 Or by Nitric acid —
3 " Aqua Regia
4 H_2O_2 - Hypo -
5 Chl Sulphur in dry solvents
6 Vapor Sulphur
7 Iodine - Bromine in water - water + the Vapor
8 KOH in Alcohol
9 Dip cellulose
10 Citrate or Acetate Ferric. Mg of Ba gummy
11 Silicate Soda (Balsam, gutta) gutta
12 Magnesium —
13 Cellulose on $ZnCl_2$ process Alcohol
14 very much boiled Urs —
15 Cellulose on Cupric ammonium —

Lying of the Al W with - blank with $CaCl_2$
then — Cu then plate Cu + strip from mold
mounted —

Lons All Hundred Records Continued

16 Permanganate K Ferricy - Cu Hypo
17 Sulphi molybdate Magnesium + Vanadate
18 Summer Vanadate
19 potassic Vanadic Oxalate amorph Vanadate
20 Vanadate Sodium Vanadate
21 Magnesium
22 Chromium
23 dip BS or Resin Very thin then graphite
24 Tetravanadophosphate Sodium heavy Cu Alcohol long copper
25 Acetate Chromium or citrate —
26 Gelatin + chromic + Light
27 Process $Sr CO_3$ against [illegible] process
28 dip rubber Chem Chl Sulphur in Benzene —
29 Process in Immersion + heated 150 for Vapor Sulphur etc — also at 150 wrapped with Rubber containing $Sr CO_3$ or powder — 600 with or powder —
30 Ferricy Tin Zn gelatinous — Formate Tin
31 Succinate Lead gelatinous Oxalate
32 Amylosulphide Mercury gelatinous Hg Sulph gelatinous Sol
33 Silicate ammonia gelatinous

1,12 Al W with about Carbon Chromium in sheep — shells repeated ball
[illegible] —

Bell Richardson [illegible]

group Calcium only
" precip Sulphide & water only

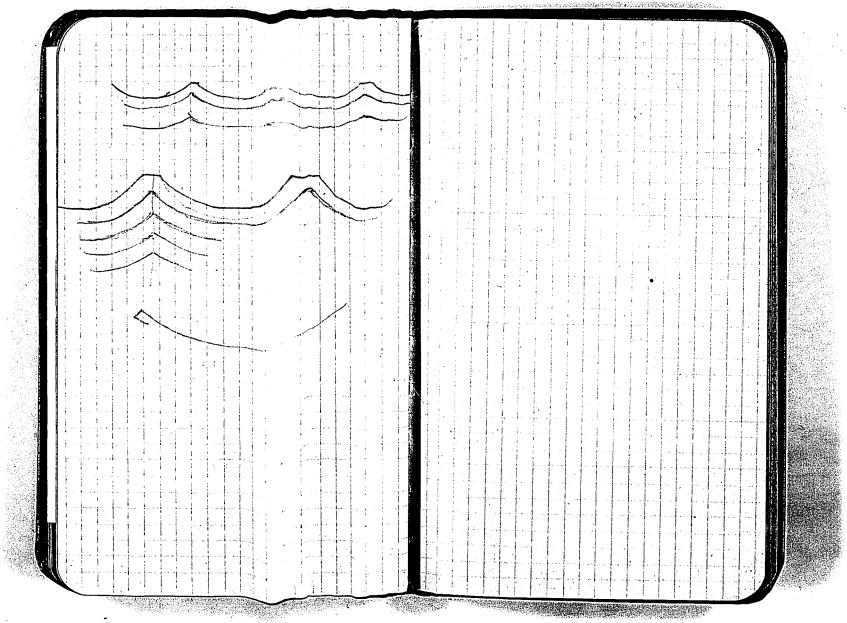
" powdered Barium [illegible] through
150 mesh —

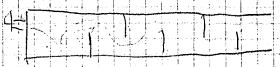
Chromate Ba [illegible] through
Chromates) — [illegible] on the [illegible]
1st then the KSO4 [illegible]
CrO [illegible]

also Iron St Chr [illegible] Ca CrO Mg
Zn Pb [illegible] K2Cr2O7

Green crystal Ammonium [illegible] & dry
then Sulphide [illegible]
St Cu Arsenic [illegible] heat sol [illegible]

Make Chromate Hydroxide
Sumptales Arsenates Borates
Aluminates Ferrates
of the metals [illegible]
boil in Ratio wash &
use alone in [illegible] with [illegible]





average week ending Recorp. for any To
January 1st 464 000
average last 30 day 538

price Pet Benzine 8½ c gal
BS&Z1 ton Bayonne —

Old Bi pocket

615

	to V	Milamp gram No 00	Milamp gram of Mn O_2	Equiv Gram Indic
1% Bi_2O_3	995	195	[illegible]	
3 "	640	257	250	1625
6 "	675	290	263	1709
9 "	720	309	281 =	1826
15 "	700	322	273	1774
30 "	480	251		

3.2 gram max 80 min 20 grams
all return 21% — least is 2.81 Milamp gram

Edison Sold fall 1909 6400 ft Lincoln

What RR wing 1st a battery that will make a round trip bet NY & Ch & return 1 day
2nd that will go to Chi & be chg'd in 2½ hours & return to Ny

Standard Pullman Car battery 4000 lbs 32 cells 125 lbs
Engl — 75 9 CP Lamps - light 6 hours Cost
$725. 180 lbs —

340 kilo Cl
2.074 (13.04 —

865
240
36
36
73

2.400
2.000 (13.04 —

2.500
500

1500
500
2.1131 208
16
Cl
258

1000
35
20
70
2.7411
1000
35
20
70
865

350
750
0
0
4
0
7
4
0
7
4
0
1
7
4
0
1
2

135

1200

1728 | 2400 | 14

1728

672

175 −

1300 lb wt

+ Horse

780.00

100

100 ft −

175 780

27

25

5

25

780 | 47

500 cells

12 cells

4 ft 90 (7 lb

Poletratotat

35 210 | 38 | 1.28

120

420

297

297

297

144

144

246

14.1 C

252 gm

35 | 2520 | 72

245

7

15

72

3

105

108

120

108

12

17.8 | 2520 | 14.1

1780

71

120

216

1080

1296

1296

29.7

25 | 446 | 17.8

25 cents

1 gm 1 min

13 min

361 gm

361 | 129

129

361

2 | 150

15 | 361

6.62
7800
1400
1500
1500
8400
605
34
40
1105
140
27
40
84
35
20
2
65
800
185
5000
27
270
175
440
330
590
127
36
32
31
40
E 44 Grd
Sr.Cl. K 804
281
140
117
1440
1440
165
330
2145
2145
101

[ITEM FOUND IN BOOK]

1 = 748780 - oblique shaving tool -

2 465972 Claim 16+17 Twin mch

3 " 18+19 Cam lift

" 23 Shaving knife,

" 24 25 26 27 28 29 + 30 Shaving knife

" 0/- Spring lock end of gate

484 582 Vacuum Deposit V

484 583 Jewell recorder + depositor + shaving tool

484 584 Jewel Repeater

499879 Claim 1 2 Centers - one on swing arm

" 2-3-4 - "

" 5 overhanging shaft + removable Gear

" 6-7-8 "

[ITEM FOUND IN BOOK]

Continued

499879

Claim 19 - shaving tool + wax guard

" 20 Elec Motor - Vertical shaft.

" 21 " Multiplexing winding + circuit control for armature circuit.

Claim 23 - Elec Motor Elec speed Controller + adjusting screw -

Claim 26 Elec machine longitudinal ~~Machine~~ frame + tightener main belt,

Claim 27 Cushions belt platen + frame

Claim 28 like 26 -

" 29 removable feed nut on feed arm.

513097 Detail Elec governor
Do we want it.

622843 - Floating Recorder or Repeater
not floating but do we want it.

[ITEM FOUND IN BOOK]

7/13 209 Expanding Plank in mould